

January 1998

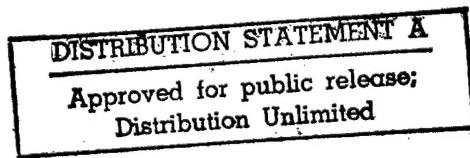
# DEFENSE INVENTORY MANAGEMENT

## Expanding Use of Best Practices for Hardware Items Can Reduce Logistics Costs



19980123 036

DTIC QUALITY INSPECTED 3



---

National Security and  
International Affairs Division

B-278395

January 20, 1998

The Honorable Carl Levin  
Ranking Minority Member  
Committee on Armed Services  
United States Senate

Dear Senator Levin:

This report is the 11th in a series of reports comparing the Department of Defense's (DOD) logistics practices with those of the private sector.<sup>1</sup> As you requested, we are continuously examining DOD's inventory management practices to identify areas where costs can be reduced and problems can be avoided by using leading private sector practices. This report focuses on DOD's progress in adopting best inventory management practices for hardware items such as bearings, valves, and bolts. The objectives of this review were to determine (1) DOD and private sector practices for managing hardware items, (2) whether DOD has adopted best practices for these items, and (3) opportunities that DOD can take advantage of to improve its management of hardware items.

---

## Results in Brief

While DOD has implemented some innovative management practices, more opportunities exist to better manage its reported \$5.7-billion hardware inventory and achieve substantial savings.<sup>2</sup> DOD continues to manage its hardware inventory using outdated and inefficient business practices that create unnecessary inventory levels, provide poor customer service, generate excess and obsolete inventory, and cost approximately \$1 billion per year to manage and distribute.

DOD buys hardware inventory years in advance of when the items are actually used. For example, based on our analyses of DOD records, 62 percent of DOD's hardware items did not have a demand from September 1995 to August 1996, and an additional 21 percent of the items had enough inventory to last for more than 2 years. These items account for about \$4.4 billion, or 77 percent, of DOD's \$5.7 billion hardware inventory. Despite DOD's substantial investment in inventory, in many cases, hardware inventory is not available when needed by DOD customers.

---

<sup>1</sup>See related GAO products at end of report.

<sup>2</sup>The \$5.7 billion is calculated using DOD's valuation methodology where excess inventory is at salvage prices (3.2 percent of the item's latest acquisition costs). If the excess hardware inventory is valued at its latest acquisition cost, hardware inventory would be an estimated \$7.2 billion.

---

When this happens, the repair of weapon systems and components is often delayed. The Navy has estimated that the lack of parts increases the repair time for aviation parts by as much as 74 percent.

DOD's overall progress in adopting best management practices for hardware items has been limited. In February 1997, DOD began testing, on a limited basis, the prime vendor concept for hardware items—one of the concepts we recommended.<sup>3</sup> These tests will potentially affect about 2 percent of DOD's \$3.1 billion annual sales of these items. These tests do not, however, fully optimize the services available in the private sector, such as ordering, storing, and distributing supplies to the customer.

The business practices we recommended in our past reports have, for the most part, been used in the private sector to provide customers with a capability to order supplies as they are needed and then receive those items within hours after the order is placed. Ordering supplies as they are needed, combined with quick logistics response times, reduces overall supply system costs, eliminates large inventories, and enables companies to reduce or eliminate the possibility of ordering supplies that may not be needed or become obsolete. To achieve similar inventory reductions, infrastructure savings, and improved customer service, DOD could expand its prime vendor programs to include tasks such as ordering, storing, and distributing supplies to the customer, and fully use the services offered under these programs.

---

## Background

The Defense Logistics Agency (DLA) is the primary manager of consumable supplies, including hardware items, used by the military services. Hardware items encompass a large part of DLA's overall operations. As shown in table 1, DLA manages about 4 million items of which 3.9 million, or 97 percent, are classified as hardware items. As of September 30, 1996, DLA's hardware inventory, valued at \$5.7 billion, accounted for 74 percent of DLA's total consumable inventory.

---

<sup>3</sup>A prime vendor buys inventory from a variety of suppliers, stores the inventory in its own warehouse, and delivers inventory to the customer within hours of receiving the order.

**Table 1: Status of DLA Consumable Item Inventory (fiscal year 1996)**

<b>Category</b>	<b>DLA's hardware inventory</b>	<b>DLA's total inventory<sup>a</sup></b>	<b>Percentage of hardware inventory to total inventory</b>
Number of items managed <sup>b</sup>	3.9 million	4.0 million	97
Value of inventory on hand	\$5.7 billion	\$7.7 billion	74
Value of material purchases	\$2.6 billion	\$5.5 billion	47
Operating costs	\$1.0 billion	\$1.4 billion	71

<sup>a</sup> Excludes fuels.<sup>b</sup>Data as of June 1997.

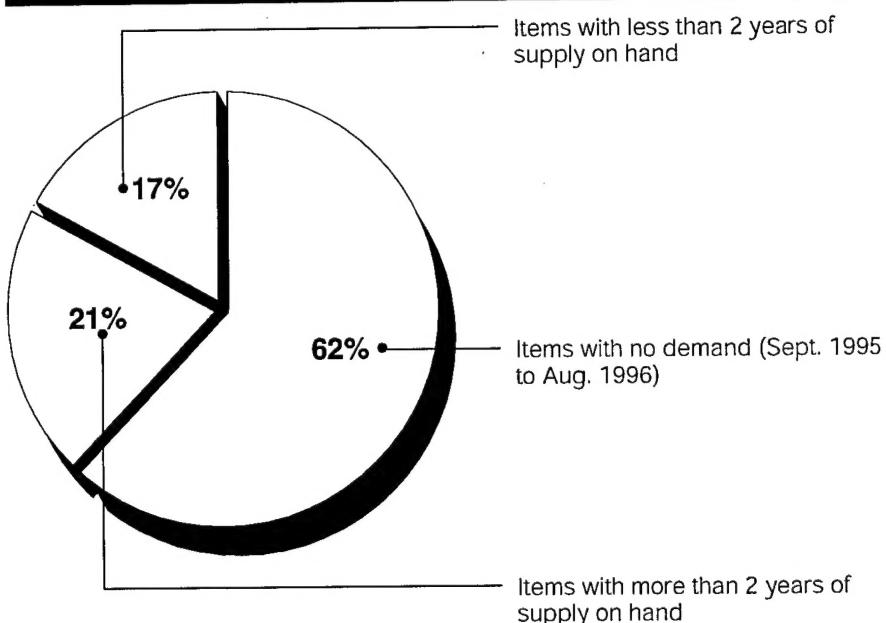
Traditionally, DLA buys hardware items in large quantities, stores them in distribution depots until they are requested by the services, and then ships them to the appropriate service facility. For example, the services operate over 20 repair depots where large amounts of these items are used for regularly scheduled maintenance of equipment and weapon systems. To store and distribute hardware items, DLA uses storage structures at 24 distribution depots, which are DOD facilities with several large warehouses, as well as 50 or more additional storage sites. In fiscal year 1996, DLA filled about 12 million requests for hardware items.

DLA's fiscal year 1996 material management costs for hardware items were reported at about \$3.6 billion. Of that amount, about \$2.6 billion was spent to purchase hardware items from commercial suppliers and \$1 billion was spent to manage and distribute inventory. To recover its operating costs, DLA charges the military services the cost of the item plus a surcharge, which covers supply center and distribution expenses, inflation, and material-related expenses such as inventory losses. In fiscal year 1996, the surcharge averaged about 39 percent for hardware items. In contrast, DLA has lowered the surcharge for medical supplies from 21.7 percent to 7.9 percent using best management practices from the private sector.

## DOD Continues to Use Inefficient and Ineffective Management Techniques for Hardware Items

DOD continues to use outdated and inefficient business practices to manage its hardware inventory. For example, DOD buys inventory years in advance of when the items are actually used. Based on our analyses of DLA records, 62 percent of DLA's hardware items did not have a demand from September 1995 to August 1996 (see fig. 1). We found an additional 21 percent of DLA's hardware items had enough inventory on hand to last for more than 2 years based on demands during the same period. These items accounted for about \$4.4 billion, or 77 percent, of DLA's \$5.7 billion hardware inventory.

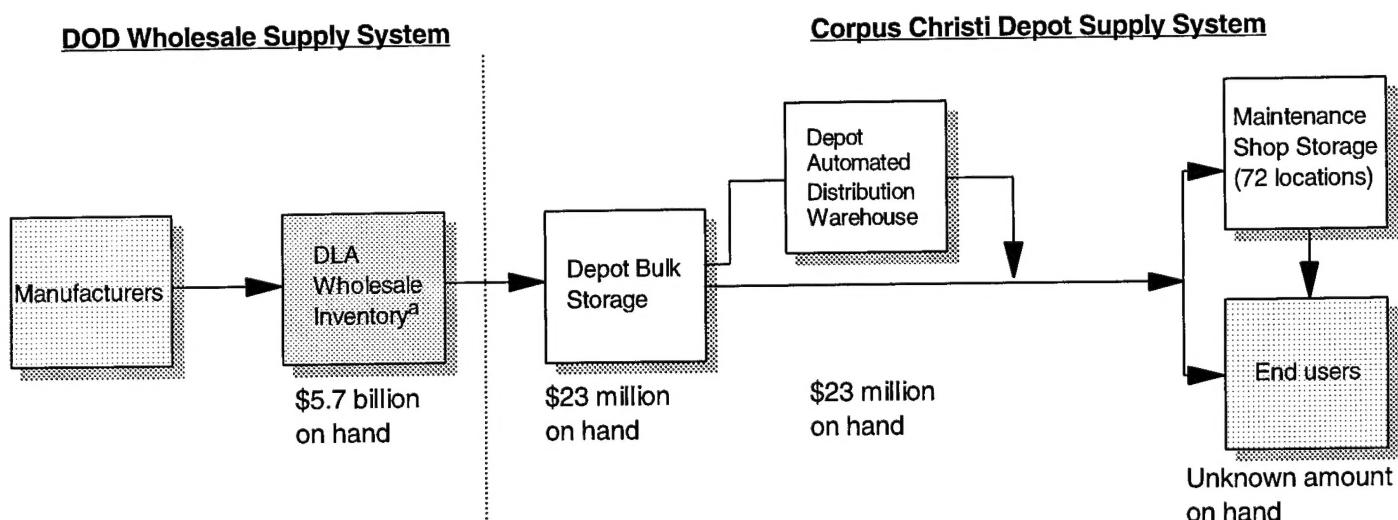
**Figure 1: Years of Supply on Hand for Hardware Items Managed by DLA**



DOD also uses a multilayered process to order and deliver hardware supplies. When the services order hardware supplies from DLA, the supplies are sent from the DLA warehouses to the military services. According to DOD records, this order and delivery process took an average of 25 days in 1996. The services then operate a base-level logistics system to deliver the inventory to the end user. This system usually requires inventory to be stored in three separate locations—bulk storage warehouses, central distribution storerooms, and end-user locations. The traditional multilayered logistics system, as highlighted in our April 1997

report on the Army's logistics system, is shown in figure 2, using the Corpus Christi Army Depot's supply system as an illustration.

**Figure 2: DOD's Logistics System Used at Corpus Christi Army Depot**



<sup>a</sup>DLA inventory is stored at multiple locations nationwide to support all DOD customers.

As of September 30, 1996, DLA reported it was storing \$5.7 billion worth of hardware items in distribution depots and warehouses. Based on inventory levels and past demands for items, we estimate that this inventory could satisfy DOD's requirements, on average, for the next 2 years. As shown in figure 2, a base-level logistics system can also hold millions of dollars of hardware inventory. When DLA-owned and service-owned inventories are combined, the total inventory levels could meet current DOD requirements, in some cases, for many years.

Despite this large investment in inventory, DOD's supply system frequently does not meet the needs of its customers. As of September 1996, DLA reported it had over 574,000 customer orders, valued at \$843 million, that it could not fill because it did not have the right stock on hand. Customers had been waiting on parts for an average of over 3 months. Also, the base-level supply system frequently could not fill orders placed by mechanics and other customers. For example, according to Army records,

---

the base warehouse at one Army depot did not fully meet customer orders 76 percent of the time during fiscal year 1996. At four other locations we examined, base-level systems did not meet customer needs between 30 and 72 percent of the time.

When hardware items are not immediately available to mechanics, the repair of weapon systems and their components is delayed, which increases repair times. For example, the Navy calculates that the lack of parts increases the repair time for aviation parts by as much as 74 percent. As of January 1997, the Navy reported it had stopped repairing over 12,000 aircraft components, valued at \$516 million, because parts were not available to complete repairs. The partially repaired items were packaged and moved to a warehouse next to the repair facility. At the time of our review, these items had been in storage for an average of 230 days. Also, according to Air Force records, at one Air Force depot location, mechanics stopped repairs on 2,748 items, valued at \$193 million, because necessary parts were not available.

---

## Best Practices Have Reduced Private Sector Logistics Costs

DOD recognizes that it cannot continue to use outdated and inefficient business practices. Due to the pressures of budgetary constraints, DOD has recognized that it must seek ways to make logistics processes as efficient as possible. As a result, the Office of the Secretary of Defense has encouraged DLA and the military services to use alternatives to DOD's traditional logistics systems, such as innovative logistics concepts used by commercial firms to improve operations.

Some of the alternatives are new concepts that private sector companies have successfully used during the past decade to improve their management of consumable items. These items were targeted because they are generally standard items with a low unit cost, are commonly stocked by several suppliers, and are used in large quantities.<sup>4</sup> In general, these concepts provide inventory users with a capability to order supplies as they are needed and then receive those items within hours after an order is placed. Ordering supplies only as they are needed, combined with quick logistics response times, enable companies to reduce or eliminate the possibility of inventory spoilage or obsolescence and reduce overall supply system costs.

In prior reports, we highlighted three concepts, or best practices, that reflect this new business philosophy in the management of consumable

---

<sup>4</sup>Consumable items are discarded after use rather than repaired.

items (see table 2). Each of these practices has resulted in significant savings for the companies that used them and improved their inventory management systems. We recommended that DOD test these concepts and expand them, where feasible, to more defense facilities. Of the three concepts—prime vendor, supplier park, and integrated supplier—we believe the integrated supplier offers DOD the greatest opportunity for streamlining its logistics operations, reducing costs, and improving customer service.<sup>5</sup>

**Table 2: Best Practices Recommended by GAO**

Concept	Description
Prime vendor	A single vendor (prime vendor) buys inventory from a variety of suppliers and stores the inventory in its own warehouse. This concept is characterized by a close partnership between the prime vendor and the customer. The customer orders supplies from the prime vendor, using electronic ordering systems that, in some cases, are provided by the prime vendor. The prime vendor delivers inventory to the customer within hours of receiving the order.
Local distribution centers/supplier parks	One or more suppliers locate a distribution center within close proximity to their customers. From this location, the supplier delivers items to the customer within 24 hours or less of receiving an order. The supplier is linked electronically with the customer. In some cases, the supplier can perform the receiving function for the customer in the local distribution center, before the inventory leaves the facility.
Integrated supplier	An integrated supplier assumes almost total inventory management responsibilities for a customer. This is the most aggressive form of a supplier partnership where a supplier representative works in the customer's facility, ordering supplies as they are needed and replenishing storage locations. Inventory is stored in the supplier's warehouse until ordered, then delivered on a "just-in-time" basis. An integrated supplier can also perform quality inspections, maintain data on usage, test the quality of parts, prepare parts kits, establish electronic data interchange links and bar coding, and provide vendor selection management.

The companies that have adopted these best practices have significantly reduced their logistics costs. For example, as we reported in December 1991, Vanderbilt University Medical Center reduced inventory levels by \$1.7 million (38 percent) through the use of a prime vendor program. In 1993, we reported PPG Industries eliminated \$4.5 million (80 percent) in maintenance and repair supplies and saved about \$600,000 in annual operating costs by locating 10 suppliers' activities at a supplier park about 600 yards from the PPG facility. In 1996, we found that a

<sup>5</sup>The use of an integrated supplier is discussed in our testimony *Inventory Management: Greater Use of Best Practices Could Reduce DOD's Logistics Costs* (GAO/T-NSIAD-97-214, July 24, 1997).

---

leading distributor of aircraft supplies reported its integrated supplier program reduced one customer's inventory by \$7.4 million (84 percent) while filling 98 percent of the customer's orders within 24 hours.

DOD has demonstrated that best practices can be applied to DOD operations. Starting in 1993, DOD successfully applied the prime vendor concept to its management of medical supplies. The prime vendor, which delivers items to DOD hospitals when ordered, has enabled DOD to reduce the need to store and distribute medical supplies. As the prime vendor concept was established nationwide, inventory levels began to decline, and warehouses once filled with medical items were emptied. DOD's prime vendor for medical supplies, along with other inventory reduction efforts, has resulted in savings that we estimate exceed \$700 million.

---

## DOD Could Build on Efforts to Use Best Practices for Hardware Items

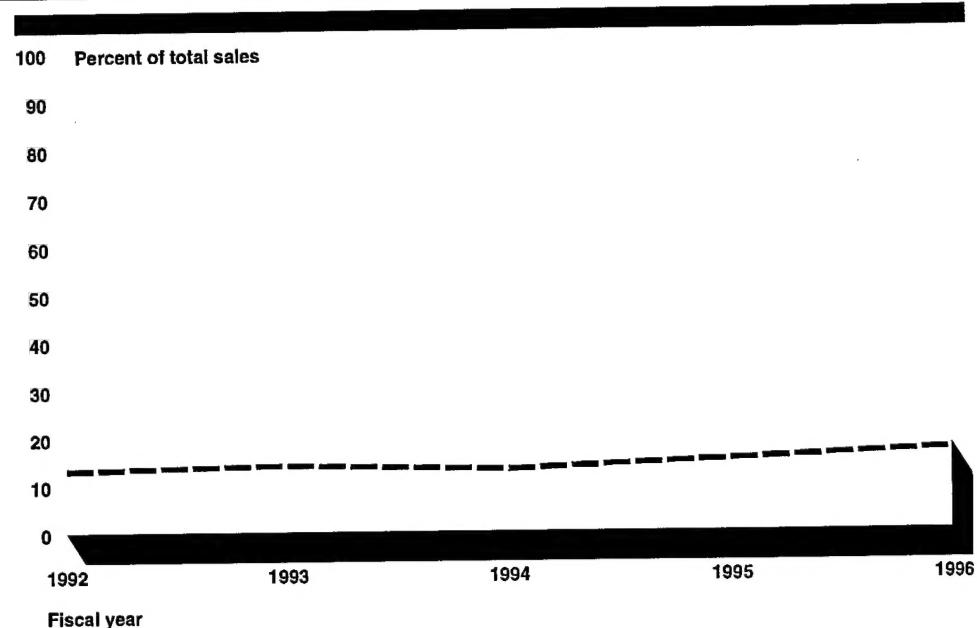
To its credit, DLA has tried new inventory practices for managing hardware items. However, despite DOD's success with its prime vendor program for medical supplies, its efforts for hardware items are limited in scope and represent only a small part of DLA's logistics operations. To achieve greater inventory reductions, infrastructure savings, and improved customer service that we have seen in the private sector, we believe DOD needs to expand its use of private sector inventory practices, such as prime vendors and integrated suppliers, and use the full range of services offered under these programs.

---

## DLA's Initiatives Have Not Progressed Much Beyond Direct Vendor Delivery

Since 1992, one of DLA's main initiatives has been a direct vendor delivery program. Under this program, DLA uses long-term contracts and electronic data systems to enable certain suppliers to deliver items directly to military installations instead of delivering the items to DLA storage sites. In fiscal year 1996, DLA reported that 17 percent of hardware sales were filled using the direct vendor delivery program. As shown in figure 3, this percentage has not varied much since 1992.

**Figure 3: Direct Delivery Sales of Hardware Items** (fiscal year 1992 to 1996)

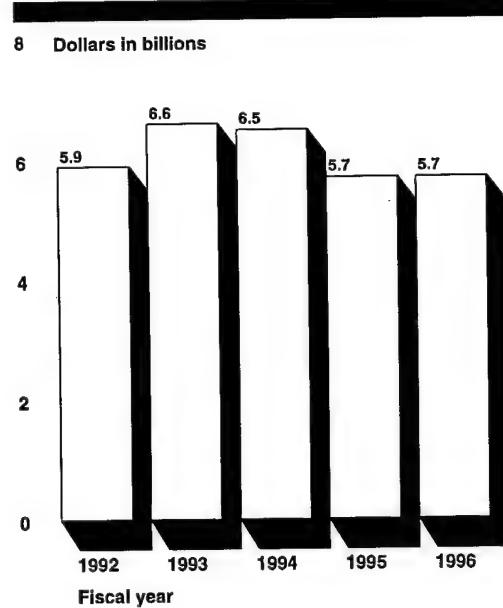


While DLA's use of direct vendor delivery has remained fairly stable since 1992, so have DLA's hardware inventory levels (see fig. 4).<sup>7</sup>

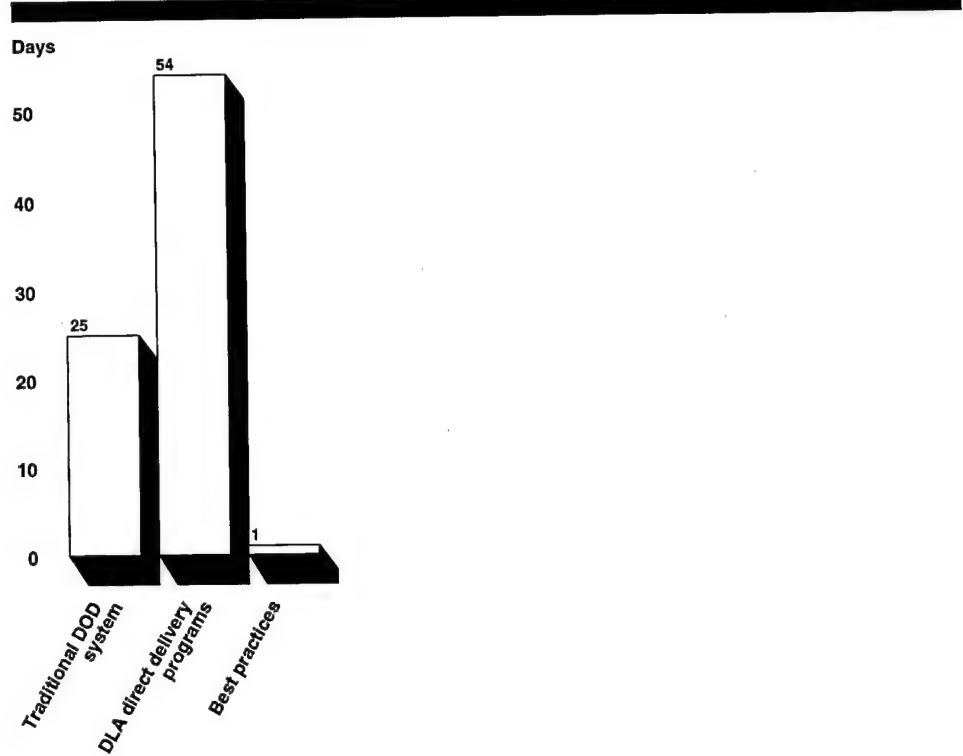
---

<sup>7</sup>DLA's reported value of hardware inventories includes inventory transferred from the military departments as part of DOD's consumable item transfer program, the majority of which were transferred between fiscal year 1992 and 1994.

**Figure 4: DLA Hardware Inventory Levels** (fiscal year 1992 to 1996)



While the direct delivery program eliminates the need to store and distribute inventory from DLA warehouses, lowering the cost to DOD customers, it has not provided a quick response to customer orders because the traditional DOD ordering process has not changed. With this program, requisitions are still sent from the services to DLA, where the orders are then relayed to a supplier. Upon receipt of an order, the supplier ships the items to the appropriate military installation. According to DLA records, with the direct delivery program, in 1996 it took an average of 54 days for customers to receive ordered items, or twice as long as the 25-day delivery average for items stocked in DLA warehouses. Both of these delivery times are significantly longer than the times prime vendors or integrated suppliers have achieved—within 24 hours of receiving an order (see fig. 5).

**Figure 5: Delivery Time Comparison**

### DOD Has Applied a Limited Form of the Prime Vendor Concept to Hardware Items

In fiscal year 1997, DOD began using a prime vendor concept, called the Virtual Prime Vendor program, for hardware supplies on a limited basis. One of the two testing areas was supply support of depot repair operations. In February 1997, DOD began using a prime vendor program to support the C-130 propeller repair shop at the Warner-Robins Air Logistics Center (ALC). DLA established this program to determine the feasibility of using prime vendors for hardware items instead of the traditional military supply system and to improve service, reduce inventories, and lower costs. Because the program was only recently initiated, DOD had not yet evaluated the program's results at the time of our review. By the second quarter of fiscal year 1998, the Air Force plans to expand the prime vendor program at Warner-Robins ALC and begin programs at two other Air Force repair depots. The Navy plans to test the concept at one depot location (see table 3). The Army has not yet developed a program to test the prime vendor concept at a repair depot or at any operating base repair activities. We estimate that DOD's programs, when implemented, will apply to about 2 percent of DLA's \$3.1 billion annual sales of hardware items.

**Table 3: DLA Prime Vendor Programs at Repair Depots**

Dollars in millions

<b>Location</b>	<b>Types of items</b>	<b>Contract award</b>	<b>Estimated annual sales</b>
Warner-Robins ALC	C-130 aircraft parts	October 1996 (actual)	\$22
Warner-Robins ALC	Avionics items	1st quarter FY 1998 (estimated)	\$10
Warner-Robins ALC	Industrial items	2nd quarter FY 1998 (estimated)	\$8
Oklahoma City ALC	Industrial items	2nd quarter FY 1998 (estimated)	\$10
Ogden ALC	Industrial items	2nd quarter FY 1998 (estimated)	\$4.5
North Island Naval Aviation Depot	Industrial items	2nd quarter FY 1998 (estimated)	\$4.5

Also in February 1997, DLA began using the prime vendor concept for facilities maintenance supplies such as plumbing, electrical, and lumber items. Under this concept, a prime vendor serves a geographic region where all military facilities within the region can elect to order maintenance supplies from the vendor. As of July 1997, 9 of 73 military facilities in the first region had elected to use the prime vendor program. By June 1999, DLA plans to have a prime vendor under contract for 10 geographic regions, covering the United States and overseas locations. As of July 1997, facilities in only 4 of the 10 regions had committed to use the program.

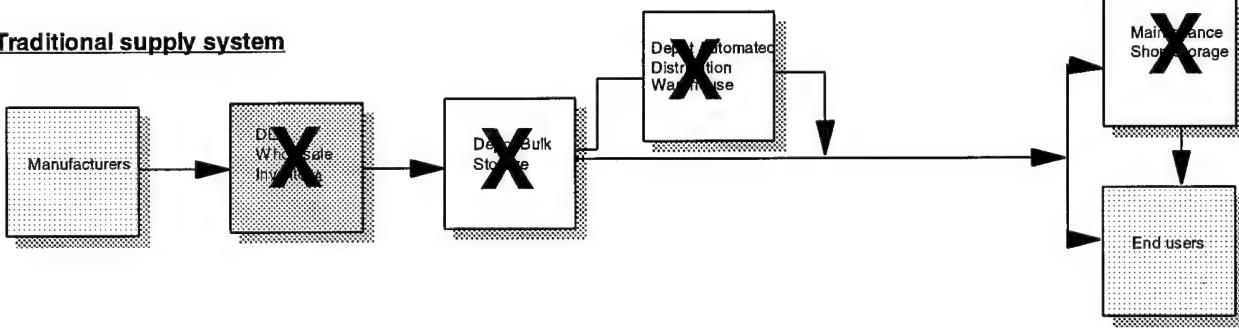
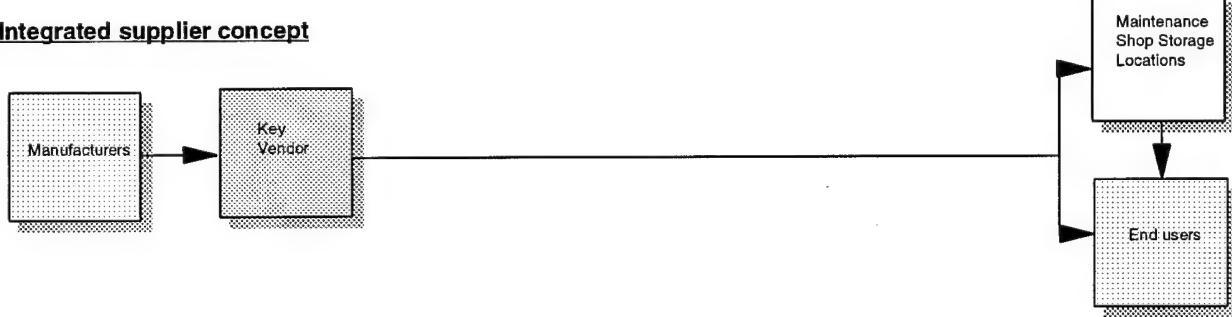
In June 1997, the Under Secretary of Defense (Comptroller)/Chief Financial Officer endorsed this concept and asked the Director of DLA, in conjunction with the military services, to develop a regional implementation plan for the DLA prime vendor program for facilities maintenance supplies. He asked that the plan identify the critical events and site designations for regional implementation within 12 months and provide for nationwide availability by the middle of fiscal year 1999. We believe this plan is critical to the program's success because it demonstrates top-management support, and it will further encourage military units to use the prime vendor services once they are established.

---

## DOD Could Further Expand Prime Vendor and Integrated Supplier Programs

DOD's prime vendor programs for hardware items, which are similar to the best practices we observed in the private sector, can be expanded to achieve greater savings while improving service. For example, neither DLA's direct delivery nor prime vendor programs streamline the services' base-level logistics systems to the extent we have seen in the private sector. DOD personnel still order, receive, store, and distribute material to the end users. If DOD transferred these functions to a prime vendor or to an integrated supplier, it could achieve substantial reductions in resource requirements and improve service to its customers. This action would also allow items to be bought at the time when they are actually needed, therefore minimizing the potential of inventory obsolescence.

As figure 6 shows, the DLA wholesale system, and at least two of three primary storage points in the base-level supply system, could be bypassed by applying the integrated supplier concept because the integrated supplier would deliver inventory directly to maintenance shops or end-user locations. The integrated supplier could also monitor storage bins, order parts, and restock bins once parts are delivered. In the private sector, having the supplier deliver inventory directly to these locations improves the availability of inventory and actively involves the supplier as a "partner" in the customer's operations. The supplier also becomes involved in testing parts for quality and monitoring part usage and ordering supplies when needed.

**Figure 6: Potential Impact of an Integrated Supplier on DOD's System****Traditional supply system****Integrated supplier concept****Key Factors in Further Adopting Best Practices**

According to DOD officials, there are no major impediments to adopting best practices such as prime vendor, supplier park, and integrated supplier concepts. However, DOD's success in expanding these concepts to encompass a larger part of its operations will depend on its ability to address two key factors. Specifically, (1) DOD may need to prepare a cost comparison between government and the commercial providers in accordance with the Office of Management and Budget (OMB) Circular A-76 and (2) military customers will have to overcome their reluctance to trying new business practices.

According to Air Force officials, a prime vendor program that would replace the base-level supply system and would involve more than 10 government personnel may not be contracted out without a cost comparison in accordance with OMB Circular A-76. According to the Air Force, the Warner-Robins ALC has about 219 government personnel involved in supply operations. Air Force officials stated that if these positions were eliminated through the prime vendor program, a cost

---

comparison would first be required, which may take 2 years to complete. We agree that a cost comparison could be a significant issue in implementing these programs. Our work has consistently shown, however, that this process is cost-effective because competition generates savings—usually through a reduction in personnel—whether the competition is won by the government or the private sector.

Another factor is that military service customers have been reluctant to try the new business practices. DOD has traditionally relied on its own internal logistics system to support its logistics needs—a philosophy that private companies have moved away from to lower the cost of doing business, provide better service, and remain competitive. According to DLA, it has been a challenge to get the services to agree to use the prime vendor programs. For example, DLA has laid out an implementation schedule for its facilities and maintenance prime vendor program, but, to date, the services have committed to use this program for less than 20 percent of the demands for these items. In another example, the Army has yet to establish a test program to determine the feasibility of using prime vendors or integrated suppliers at its repair facilities. Without the commitment of the services to these programs, DOD's success in improving its operations will be limited.

The “corporate culture” within DOD has been traditionally resistant to change. Organizations often find changes in operations threatening and are unwilling to change current behavior until proposed ideas have been proven. In June 1994, we convened a symposium on reengineering that brought together executives from five Fortune 500 companies that have been successful in reengineering activities.<sup>8</sup> Panel members at the symposium expressed the view that committed and engaged top managers must support and lead reengineering efforts to ensure success because top management has the authority to encourage employees to accept reengineered roles. Also, top management has the responsibility to set the corporate agenda and define the organization’s culture and the ability to remove barriers that block changes to the corporate mindset.

---

## Conclusions

There is a high potential for DOD to greatly expand the use of the private sector best practices we have recommended to improve logistics operations and lower costs. DOD has adopted the prime vendor concept to improve the management of medical inventories, demonstrating that such private sector practices can be applied to DOD operations. However, DOD

---

<sup>8</sup>Reengineering Organizations: Results of a GAO Symposium (GAO/NSIAD-95-34, Dec. 13, 1994).

---

has adopted a prime vendor program for hardware items only in a limited way and the other changes that have been introduced have not resulted in significant improvements.

In addition, the services have been slow to adopt these initiatives into their operations. For example, the Army has yet to establish a plan to test the prime vendor concept at repair depots and the Navy plans to only begin testing this concept in fiscal year 1998. To ensure the military services pursue best practices to the maximum extent possible, DOD's top management needs to continue its commitment to changing its inventory management culture and further motivate the services to use these practices.

---

## Recommendations

To encourage DLA and the services to more aggressively apply best practices to its operations, we recommend that the Secretary of Defense:

- Identify a "Champion of Change" within the Office of the Secretary of Defense that would be responsible for coordinating and overseeing improvement initiatives throughout DOD's operations and ensuring the prime vendor and integrated supplier concepts (1) encompass a broader part of DOD's operations, (2) fully use the services offered in the private sector, and (3) are used by all military services whenever it is cost effective to do so.
- Direct (1) the Secretary of the Army to identify at least one repair depot location that will join the other services in testing the prime vendor concept and (2) the secretaries of the military services to identify repair activities at operating bases as test sites.
- Direct the Director of DLA and the secretaries of each military service to establish a test of the integrated supplier concept at one or more repair depots. DLA and the military services should (1) establish aggressive milestones for testing and implementing the prime vendor and integrated supplier programs so as not to delay implementing such programs if the tests find them to be feasible and (2) develop the means to expeditiously measure the total costs and benefits under the prime vendor and integrated supplier programs to compare them to the total costs and benefits incurred under the traditional system.

---

## Agency Comments and Our Evaluation

In commenting on a draft of this report, DOD generally concurred with the findings and recommendations. DOD stated that the Office of the Deputy Under Secretary of Defense (Logistics) is responsible for coordinating and

---

overseeing material management improvement initiatives throughout DOD and will be responsible for ensuring that private sector practices are used by the military services to the maximum extent possible where it meets readiness requirements and is cost-effective to do so. According to DOD, it will direct the Army to identify a repair depot that will test the prime vendor concept. It will also direct DLA and the military services to identify one or more repair depots to test the integrated supplier concept. DOD also agreed to identify repair activities at operating bases that would test the prime vendor concept and DOD expects to have test sites designated by June 30, 1998. We plan to closely monitor DOD's progress in establishing aggressive milestones for testing and implementing these concepts and in developing the means for measuring the total costs and benefits incurred from these tests. DOD's comments are included in appendix I.

---

## Scope and Methodology

We reviewed documents and interviewed officials on DOD's logistics policies, practices, and efforts to improve its operations. We contacted officials at the Office of the Deputy Under Secretary of Defense for Logistics, Washington, D.C.; DLA Headquarters, Fort Belvoir, Virginia; Air Force Materiel Command, Wright-Patterson Air Force Base, Ohio; Naval Supply Systems Command, Mechanicsburg, Pennsylvania; Naval Air Systems Command, Arlington, Virginia; and the Army Industrial Operations Command, Rock Island, Illinois. Also, we discussed the potential applications of private sector logistics practices to DOD's operations and any impediments to using these practices with these officials.

To determine the nature and extent of DOD's progress in adopting best practices, we visited the following organizations:

- Defense Supply Center Richmond, Richmond Virginia;
- Defense Supply Center Columbus, Columbus, Ohio;
- Defense Industrial Supply Center, Philadelphia, Pennsylvania; and
- Warner-Robins ALC, Robins Air Force Base, Georgia.

These locations are involved in initiatives that are intended to improve DOD's logistics operations. At these locations, we discussed (1) inventory management practices that DOD is using for hardware items; (2) best practices, programs, and tests underway or planned to improve DOD operations; and (3) DOD officials' positions on the use of best practices as alternatives to traditional DOD inventory practices. At Warner-Robins ALC, the pilot location for several of DOD's initiatives, we discussed with supply

---

and maintenance personnel the results of the initiatives and the impacts on supply operations.

Also during our review, we obtained and analyzed detailed information on inventory levels and usage, supply effectiveness and response times, operating costs, and other related logistics performance measures. Except where noted, our data reflected inventory valued by DOD using its standard inventory valuation method—inventory valued at latest acquisition costs and inventory classified as excess valued at salvage prices (3.2 percent of its latest acquisition costs). We did not test or otherwise validate DOD's inventory data.

To identify leading business practices, we used information from our series of 10 reports that have been issued since 1991. This information included the results of an extensive literature search of leading inventory management concepts and detailed examinations and discussions of logistics practices used by companies such as PPG Industries, Bethlehem Steel, British Airways, United Airlines, and Tri-Star Aerospace. We also participated in roundtables, symposiums, and conferences with recognized leaders in the logistics field to obtain information on how companies are applying integrated approaches to their logistics operations and establishing supplier partnerships to eliminate unnecessary functions and reduce costs. We did not independently verify the accuracy of logistics costs and performance measures provided by the private sector organizations.

We conducted our review from January 1997 to October 1997 in accordance with generally accepted government auditing standards.

---

We are sending copies of this report to the appropriate congressional committees; the Secretaries of Defense, the Army, the Air Force, and the Navy; the Directors of DLA and OMB; and other interested parties. We will make copies available to others upon request.

---

Please contact me on (202) 512-8412 if you or your staff have any questions concerning this report. The major contributors to this report are listed in appendix II.

Sincerely yours,



David R. Warren, Director  
Defense Management Issues

---

# Contents

Letter	1
Appendix I Comments From the Department of Defense	22
Appendix II Major Contributors to This Report	25
Related GAO Products	28
Tables	3
Table 1: Status of DLA Consumable Item Inventory	3
Table 2: Best Practices Recommended By GAO	7
Table 3: DLA Prime Vendor Programs at Repair Depots	12
Figures	4
Figure 1: Years of Supply on Hand for Hardware Items Managed by DLA	4
Figure 2: DOD's Logistics System Used at Corpus Christi Army Depot	5
Figure 3: Direct Delivery Sales of Hardware Items	9
Figure 4: DLA Hardware Inventory Levels	10
Figure 5: Delivery Time Comparison	11
Figure 6: Potential Impact of an Integrated Supplier on DOD's System	14

---

## Abbreviations

ALC	Air Logistics Center
DLA	Defense Logistics Agency
DOD	Department of Defense
OMB	Office of Management and Budget



# Comments From the Department of Defense

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

**OFFICE OF THE UNDER SECRETARY OF DEFENSE**

  
3000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3000

[08 DEC 1997]

ACQUISITION AND TECHNOLOGY  
(L/MDM)

Mr. David R. Warren  
Director, Defense Management  
and NASA Issues  
National Security and International  
Affairs Division  
U.S. General Accounting Office  
Washington, D.C. 20548

Dear Mr. Warren:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "DEFENSE INVENTORY MANAGEMENT: Expanding Use of Best Practices for Hardware Items Can Reduce Logistics Costs," dated October 30, 1997 (GAO Code 709231/OSD Case 1485).

The Department generally concurs with the report. However, we urge that you qualify the report's conclusion that Defense Logistics Agency hardware inventory levels remain about the same as they did five years ago. This conclusion ignores the impact of the transfer of consumable items from the Military Services. In fact, Defense Logistics Agency hardware inventory levels decreased by 36 percent between 1992 and 1996 when the impact of that transfer is removed.

The Department's detailed comments on the recommendations are included in the enclosure. The Department appreciates the opportunity to comment on the draft report.

Sincerely,

*James B. Emaniser*  
James B. Emaniser  
Acting Principal Assistant Deputy  
Under Secretary of Defense(Logistics)

Enclosure

G

---

**Appendix I**  
**Comments From the Department of Defense**

**GAO DRAFT REPORT - DATED OCTOBER 30, 1997  
(GAO CODE 709231) OSD CASE 1485**

**"DEFENSE INVENTORY MANAGEMENT: EXPANDING USE OF BEST PRACTICES FOR HARDWARE ITEMS CAN REDUCE LOGISTICS COSTS"**

**DEPARTMENT OF DEFENSE RESPONSE TO THE GAO RECOMMENDATIONS**

**RECOMMENDATION 1:** To encourage the Defense Logistics Agency (DLA) and the Services to more aggressively apply best practices to its operations, the GAO recommended that the Secretary of Defense identify a "Champion of Change" within the Office of the Secretary of Defense that would be responsible for coordinating and overseeing improvement initiatives throughout DoD's operations and ensuring the prime vendor and integrated supplier concepts (1) encompass a broader part of DoD's operations, (2) fully use the services offered in the private sector, and (3) are used by all military services whenever is cost effective to do so. (pp. 19-20/GAO Draft Report)

Now on p. 16.

**DOD RESPONSE:** Concur. The Office of the Deputy Under Secretary of Defense (Logistics) is responsible for coordinating and overseeing materiel management improvement initiatives throughout the Department's operations. Accordingly, this office is responsible for ensuring maximum feasible use, to the extent consistent with readiness and cost effectiveness, of private sector practices and services.

**RECOMMENDATION 2:** The GAO recommended that the Secretary of Defense direct (1) the Secretary of the Army to identify at least one repair depot location that will join the other services in testing the prime vendor concept and (2) the Secretaries of the military services to identify repair activities at operating bases as test sites. (p. 20/GAO Draft Report)

Now on p. 16.

**DOD RESPONSE:** Concur. Estimated date for designation of the cited test sites is June 30, 1998.

**RECOMMENDATION 3:** The GAO recommended that the Secretary of Defense direct the Director of DLA and the Secretaries of each military service to establish a test of the integrated supplier concept at one or more repair depots. DLA and military services should (1) establish aggressive milestones for testing and implementing such programs if the tests find them to be feasible and (2) develop the means to expeditiously measure the total costs and benefits incurred under the traditional system. (p. 20/GAO Draft Report)

Now on p. 16.

**DOD RESPONSE:** Concur. We note that, using the definitions on Page 10, Table 2, of "Best Practices Recommended by GAO", Virtual Prime Vendor initiatives undertaken by the Defense Logistics Agency represent an integrated supplier approach. Estimated date for designation of the cited test sites is June 30, 1998.

---

**Appendix I**  
**Comments From the Department of Defense**

---

The following is a GAO comment on the Department of Defense's (DOD) letter dated December 8, 1997.

---

**GAO Comment**

1. In commenting on a draft of this report, DOD stated that the reported value of hardware inventories includes inventory transferred from the military departments as part of DOD's consumable item transfer program. According to DOD, when those transferred items are excluded, the Defense Logistics Agency's (DLA) inventory of consumable items decreased 36 percent between fiscal year 1992 and 1996. We qualified our report to address DOD's concerns. However, since these items are now a part of DLA's total hardware inventories, we believe aggressive steps are needed to reduce such inventories, which are currently large enough to meet DOD's requirements for the next 2 years. By expanding the use of best practices, DLA could further reduce its hardware inventories and lower its operating costs.

# Major Contributors to This Report

---

**National Security and  
International Affairs  
Division, Washington,  
D.C.**

Charles I. (Bud) Patton, Jr.  
Kenneth R. Knouse, Jr.

---

**Dayton Office**

Matthew B. Lea  
Robert L. Repasky  
Frederick J. Naas

---

**Dallas Office**

Robert D. Malpass

---

**St. Louis Office**

Robert C. Sommer





# Related GAO Products

Inventory Management: Greater Use of Best Practices Could Reduce DOD's Logistics Costs (GAO/T-NSIAD-97-214, July 24, 1997).

Inventory Management: The Army Could Reduce Logistics Costs for Aviation Parts by Adopting Best Practices (GAO/NSIAD-97-32, Apr. 15, 1997).

Defense Inventory Management: Problems, Progress, and Additional Actions Needed (GAO/T-NSIAD-97-109 Mar. 20, 1997).

Inventory Management: Adopting Best Practices Could Enhance Navy Efforts to Achieve Efficiencies and Savings (GAO/NSIAD-96-156, July 12, 1996).

Best Management Practices: Reengineering the Air Force's Logistics System Can Yield Substantial Savings (GAO/NSIAD-96-5, Feb. 21, 1996).

Inventory Management: DOD Can Build on Progress in Using Best Practices to Achieve Substantial Savings (GAO/NSIAD-95-142, Aug. 4, 1995).

Commercial Practices: DOD Could Reduce Electronics Inventories by Using Private Sector Techniques (GAO/NSIAD-94-110, June 29, 1994).

Commercial Practices: Leading-Edge Practices Can Help DOD Better Manage Clothing and Textile Stocks (GAO/NSIAD-94-64, Apr. 13, 1994).

Commercial Practices: DOD Could Save Millions by Reducing Maintenance and Repair Inventories (GAO/NSIAD-93-155, June 7, 1993).

DOD Food Inventory: Using Private Sector Practices Can Reduce Costs and Eliminate Problems (GAO/NSIAD-93-116, June 4, 1993).

DOD Medical Inventory: Reductions Can Be Made Through the Use of Commercial Practices (GAO/NSIAD-92-58, Dec. 5, 1991).

Commercial Practices: Opportunities Exist to Reduce Aircraft Engine Support Costs (GAO/NSIAD-91-240, June 28, 1991).

---

### Ordering Information

The first copy of each GAO report and testimony is free. Additional copies are \$2 each. Orders should be sent to the following address, accompanied by a check or money order made out to the Superintendent of Documents, when necessary. VISA and MasterCard credit cards are accepted, also. Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.

**Orders by mail:**

**U.S. General Accounting Office  
P.O. Box 37050  
Washington, DC 20013**

**or visit:**

**Room 1100  
700 4th St. NW (corner of 4th and G Sts. NW)  
U.S. General Accounting Office  
Washington, DC**

**Orders may also be placed by calling (202) 512-6000  
or by using fax number (202) 512-6061, or TDD (202) 512-2537.**

**Each day, GAO issues a list of newly available reports and testimony. To receive facsimile copies of the daily list or any list from the past 30 days, please call (202) 512-6000 using a touchtone phone. A recorded menu will provide information on how to obtain these lists.**

**For information on how to access GAO reports on the INTERNET,  
send an e-mail message with "info" in the body to:**

**info@www.gao.gov**

**or visit GAO's World Wide Web Home Page at:**

**<http://www.gao.gov>**

United States  
General Accounting Office  
Washington, D.C. 20548-0001

Bulk Rate  
Postage & Fees Paid  
GAO  
Permit No. G100

Official Business  
Penalty for Private Use \$300

Address Correction Requested

